



Breast reconstruction using dermoglandular flaps and fat grafting following the resection of unilateral giant fibrocystic changes

Ismail Kucuker¹, Musa Kemal Keles², Ibrahim Alper Aksakal³

ABSTRACT

Giant benign breast masses have been reported in the literature. Most of these reports are lipomas and fibroadenomas. Fibrocystic breast disease is also very common but has not been described as a giant mass in the breast as of yet. It can also be seen with fibroadenosis combined with micro- and macro-cyst formations. In this study, the aim was to present two-stage reconstructive management to restore a severe breast asymmetry caused by a rare benign lesion. A 39-year-old woman with unilateral asymmetry in her breast was admitted to the clinic. Preoperative USG revealed fibroglandular tissue in her right breast but did not show a well-circumscribed mass. It also showed micro- and macro-cysts. It was concluded that in case of severe breast asymmetry, a combination of different techniques is required.

Key words: Breast reconstruction, fat graft, fibroadenoma

Introduction

Benign breast diseases are very common. It is estimated that approximately half of all women develop some degree of fibrocystic breast disease during their lifetime, and one out of every five women develops a fibroadenoma [1, 2]. However, benign breast diseases are generally asymptomatic and the incidence of fibrocystic breast disease and fibroadenoma found through biopsy is only 8.8% and 2.2%, respectively [2].

Giant breast masses are defined as those over 5 cm in diameter and more than 500 g in weight [3-5]. Giant unilateral breast masses are very rare and are mostly giant lipomas [4, 6, 7] and fibroadenomas [3, 8]. As is best presently known, unilateral giant fibrocystic

changes, including fibroadenosis combined with micro- and macro-cyst formations, have not been previously documented.

In this study, a case involving the excision of a giant unilateral benign mass of the breast is presented and described is the two-stage reconstructive techniques used in the restoration of the breast shape.

Case Report

A 39-year-old Caucasian woman was referred to the clinic with a history of progressive enlargement of her right breast following breast feeding of her third child. As a result of the formation of an abscess in her left breast during the period of breastfeeding, the baby had refused to feed from her left breast even after treatment

Author affiliations : Department of Plastic Reconstructive and Aesthetic Surgery, ¹Ondokuz Mayıs University, Samsun, Turkey ²Numune Hospital, Konya, Turkey ³Mehmet Aydın Education Hospital, Samsun, Turkey

Correspondence : Musa Kemal Keles, MD, Department of Plastic Reconstructive and Aesthetic Surgery, Numune Hospital, Konya, Turkey
e-mail: mukeke@gmail.com

Received / Accepted : May 24, 2015 / July 21, 2015

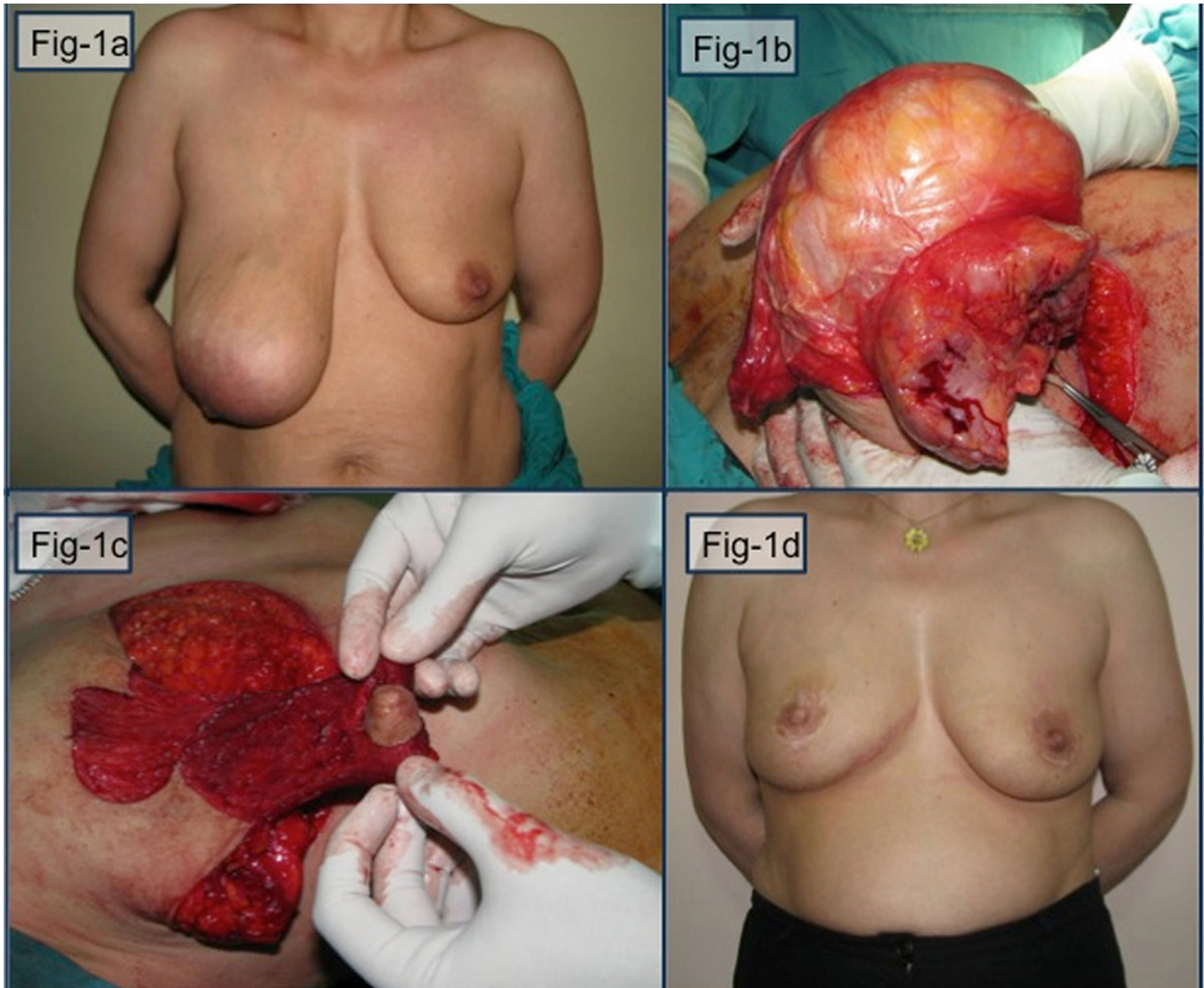


Figure 1. a: The patient with considerable breast asymmetry secondary to a giant solitary mass of the right breast. **b:** Intraoperative view of the mass. **c:** Undermining of the nipple areola complex by the mass and loss of vascular reliability. **d:** Postoperative one year result of the patient after fat injections to both breasts and contralateral mastopexy.

and she had fed her child solely from her right breast for 30 months.

Physical examination demonstrated considerable breast asymmetry. A large, semi-mobile, soft and painless ovoid mass was found in the lower quadrants of her right breast (Figure 1a). There were no palpable nodes in the axilla. Ultrasonography showed increased fibroglandular tissue in her right breast but did not exhibit a well-circumscribed mass. It also showed micro- and macro-cysts. A fine needle aspiration biopsy taken from the core of the lesion indicated benign breast changes.

Preoperative markings were based initially on a superomedial pedicled, Wise-pattern skin reduction, as the mass encompassed the lower quadrant of the breast. However, on commencing pedicle isolation, following de-epithelization, an unexpectedly capsulated and

well-defined mass, resembling both fibroadenoma and normal glandular tissue, was encountered (Figure 1b). The mass weighed 666 g and measured $14.5 \times 13 \times 8$ cm (Figure 1b). After removal of the mass, the planned preoperative superomedial pedicled breast reduction could not be completed. As a result of the excision of the mass, the right breast became smaller than the left. The decision was made to refrain from any further excision from the right breast and, after de-epithelization of the lower tissue remnants, pillar sutures were used to gather the lateral flaps and to gain projection to the breast. As it was planned to raise the nipple areola complex with Wise-Pattern superomedial pedicle concept, the inferior skin attachments of the pedicle were incised. After the mass was removed, it was realized that the mass had totally undermined the peripedicular tis-

sues and viability of the pedicle was lost (Figure 1c). So, the nipple areola complex was transferred to its new position using a free nipple pattern. Despite the right breast becoming smaller than expected, contralateral reduction was not performed, as the patient preoperatively exclaimed that she was happy with her left breast position and size. The pathology results confirmed the clinical diagnosis of fibrocystic changes with micro- and macro-cyst formation, combined with fibroadenosis in some regions.

Six months postoperatively, the patient complained about breast asymmetry and wanted more symmetric nipples, enlargement of her right breast and more fullness in the upper pole of the left breast. The patient was initially offered asymmetric and bilateral silicon prosthesis placement, with left mastopexy, but declined the silicon prostheses. The decision was therefore made to perform a mastopexy on her left breast with bilateral breast enlargement using fat injections. Of the 200 cm³ of fat grafts harvested from the abdomen, 100 cm³ was injected into the upper pole and 50 cm³ into the lower pole of the right breast, and, following mastopexy, 50 cm³ fat was used in the upper pole of the left breast. Six months after the second operation, she was satisfied with the result and did not want further tattoo recoloring of the areola (Figure 1d). Postoperative ultrasonography was reported as normal except for three small fat cysts; two in the right breast and one in the left breast.

Discussion

Benign breast diseases are very common and it is estimated that approximately half of all women are affected [9]. However, asymmetric giant fibrocystic changes are extremely rare and, as best as is presently known, have not been previously described in the literature.

Micro- and macro-cyst formation occurs as a result of involution disorders of the lobules [2]. Since the process of involution can extend over more than 20 years of monthly cycles of mitosis and apoptosis, it is not surprising that a number of aberrations, such as micro- and macro-cyst formation, should arise in the normal breast. As breastfeeding is an effective stimulator of lobular tissue, it is not surprising to see cystic changes in a breast following a period of breastfeeding. In this case, this involutinal disorder was most probably related to the patient's baby feeding with only her

right breast for 30 months

After excision of the giant solitary breast masses, the only vascular resource of the nipple areola complex (NAC) may become the skin pedicle. Directly starting the dissection with a Wise pattern reduction marking and incising a number of parts of the skin pedicle, the NAC may lose its circulation reliability and a free NAC grafting technique may be necessary for the prevention of ischemic necrosis.

Besides the viability of the NAC, using and transposing the remnant breast tissues are also critical to reshape the breast. In these cases, just de-epitelization of the skin flaps and using these tissues as fibroglandular flaps in combination with pillar sutures may be necessary to save breast volume and projection.

Using a silicon prosthesis for the correction of breast asymmetry is a routine procedure, but quite a few patients refuse to have artificial materials inside their body. Thus, fat grafting becomes the best choice in these patients to overcome the breast asymmetries.

Several authors have reported long-term favorable results for autologous fat grafting in breast restoration [10,11]. Although fat grafting may lead to radiological changes, an experienced radiologist can differentiate between these and pathological changes [10,11].

Overall, unilateral benign giant breast masses can lead to severe breast asymmetry, but breast surgeons can combine different flap and graft techniques to correct these types of asymmetries. These cases may require a variety of skin pedicle or grafting techniques for the correction of the nipple areola complex. Fat injection is also a powerful tool for equalizing size in cases of asymmetric breasts.

Acknowledgement

The authors declare that they have no conflict of interest to disclose.

Conflict of interest statement

The authors have no conflicts of interest to declare.

References

1. Goehring C, Morabia A. Epidemiology of benign breast disease, with special attention to histologic types. *Epidemiol Rev* 1997;19:310–27.
2. Courtillot C, Plu-Bureau G, Binart N, Balleguier C, Sigal-Zafrani B, Goffin V, et al. Benign breast diseases. *J Mammary Gland Biol Neoplasia*

- 2005;10:325-35.
3. Gobbi D, Dall'Igna P, Alaggio R, Nitti D, Cecchetto G. Giant fibroadenoma of the breast in adolescents: report of 2 cases. *J Pediatr Surg* 2009;44:e39-41.
 4. Bonomi S, Salval A, Settembrini F, Musumarra G, Rapisarda V. Breast reshaping with dermaglandular flaps after giant lipoma removal: versatility of oncoplastic techniques. *Aesthetic Plast Surg* 2012;36:355-8.
 5. Hawary M, Cardoso E, Sultan M, Hassanain J. Giant breast tumors. *Ann Saudi Med* 1999;19:174-6.
 6. Ribeiro RC, Saltz R, España Quintera LF. Breast reconstruction with parenchymal cross after giant lipoma removal. *Aesthetic Plast Surg* 2008;32:695-7.
 7. Grossman J, Menes T, Lahat G, Gur E, Weiss J, Barnea Y. Use of the oncoplastic reduction pattern technique following removal of a giant breast lipoma. *Ann Plast Surg* 2011;67:106-8.
 8. Marzese DM, Gago FE, Orozco JI, Tello OM, Roqué M, Vargas-Roig LM. Aberrant DNA methylation of cancer-related genes in giant breast fibroadenoma: a case report. *J Med Case Rep* 2011;5:516.
 9. Norwood SL. Fibrocystic breast disease. An update and review. *J Obstet Gynecol Neonatal Nurs* 1990;19:116-21.
 10. Illouz YG, Sterodimas A. Autologous fat transplantation to the breast: a personal technique with 25 years of experience. *Aesthetic Plast Surg* 2009;33:706-15.
 11. Rosing JH, Wong G, Wong MS, Sahar D, Stevenson TR, Pu LL. Autologous fat grafting for primary breast augmentation: a systematic review. *Aesthetic Plast Surg* 2011;35:882-90.